

WHAT IS CLAIMED IS:

1. A method of providing differentiated service in an information management environment, comprising at least one of prioritizing performance of at least one information manipulation task in a session-aware manner; prioritizing performance of at least one information manipulation task using dynamic resource allocation or re-allocation; or a combination thereof.

2. The method of claim 1, wherein said method comprises prioritizing performance of said at least one information manipulation task based on one or more class identification parameters associated with said information manipulation task and based on one or more system performance parameters.

3. The method of claim 1, wherein said method comprises prioritizing performance of said at least one information manipulation task based on one or more class identification parameters associated with said information manipulation task and based on one or more system performance parameters and on one or more system service parameters.

4. The method of claim 1, wherein said method comprises prioritizing performance of said at least one information manipulation task based on one or more priority-indicative parameters associated with said information manipulation task, one or more priority-indicative parameters associated with a request for said information manipulation task, one or more priority-indicative parameters associated with a user requesting said information manipulation task, or a combination thereof.

5. The method of claim 3, wherein said method further comprises provisioning said one or more system service parameters.

6. The method of claim 2, wherein said method further comprises monitoring said one or more system performance parameters related to information management in real time or on a historical basis.

7. The method of claim 6, further comprising reporting information related to said monitored system performance parameters.

8. The method of claim 3, wherein said method further comprises provisioning said one or more system service parameters; and monitoring said one or more system performance parameters related to information management in real time or on a historical basis.

9. The method of claim 8, further comprising reporting information related to said monitored system performance parameters.

9. The method of claim 2, wherein said one or more class identification parameters comprise at least one of identity or class of user or request, type of request, resource requirement associated with fulfillment of a particular request, or a combination thereof; and wherein said one or more system performance parameters comprise at least one of resource availability, resource usage, adherence to provisioned system service parameters, content usage patterns, time of day access patterns, or a combination thereof.

10. The method of claim 8, wherein said one or more class identification parameters comprise at least one of identity or class of user or request, type of request, resource requirement associated with fulfillment of a particular request, or a combination thereof; wherein said system service parameters comprise at least one of aggregate bandwidth ceiling, service level agreement policy, admission control policy, information metering policy, processing resource allocation policy, storage resource allocation policy, information metering policy or a combination thereof; and wherein said one or more system performance parameters comprise at least one of resource availability, resource usage, adherence to provisioned system service parameters, content usage patterns, time of day access patterns, or a combination thereof.

11. The method of claim 9, wherein said reported information comprises at least one of information related to operating or usage characteristics of an information management system, subsystems or resources; information related to processing of individual information management requests or classes of information management requests, or a combination thereof; wherein said one or more class identification parameters comprise at least one of identity or class of user or request, type of request, resource requirement associated with fulfillment of a particular request, or a combination thereof; wherein said system service parameters comprise at least one of aggregate bandwidth ceiling, service level agreement

policy, admission control policy, information metering policy, processing resource allocation policy, storage resource allocation policy, or a combination thereof; and wherein said one or more system performance parameters comprise at least one of resource availability, resource usage, adherence to provisioned system service parameters, content usage patterns, time of day access patterns, or a combination thereof.

12. The method of claim 11, wherein said reported information comprises at least one of system resource utilization metrics, application performance data, SLA performance data, or a combination thereof.

13. The method of claim 12, further comprising providing said reported information to one or more physically remote located systems or external entities for generation of billing data based thereon.

14. The method of claim 11, wherein said reported information comprises billing information.

15. The method of claim 12, further comprising adjusting information management processing behavior based on said one or more monitored system performance parameters.

16. The method of claim 15, wherein said adjusting said information management processing behavior comprises adjusting said information management processing behavior to bring system performance into adherence with said one or more of said system service parameters.

17. The method of claim 1, wherein said method comprises providing said differentiated service at a point outside a core of a network.

18. The method of claim 1, wherein said method comprises providing said differentiated service in a network endpoint information management system.

19. The method of claim 1, wherein said method comprises providing said differentiated service in a network endpoint content delivery system.

20. The method of claim 1, wherein said method comprises providing said differentiated service using an information management system having a deterministic system architecture that comprises a plurality of distributively interconnected processing engines.

21. The method of claim 1, wherein said method comprises prioritizing performance of at least one information manipulation task using dynamic resource allocation or re-allocation

22. The method of claim 1, wherein said differentiated service comprises differentiated business service.

23. The method of claim 1, wherein said differentiated service comprises differentiated information service.

24. A method of providing differentiated service, comprising prioritizing performance of at least one information manipulation task in an information management system comprising a deterministic system architecture.

25. The method of claim 24, wherein said method comprises prioritizing performance of said at least one information manipulation task based on one or more class identification parameters associated with said information manipulation task, based on one or more system service parameters associated with said system, based on one or more system performance parameters associated with said system, or a combination thereof.

26. The method of claim 24, wherein said method comprises prioritizing performance of said at least one information manipulation task based on a combination of one or more class identification parameters associated with said information manipulation task, one or more system service parameters associated with said system, and one or more system performance parameters associated with said system.

27. The method of claim 26, wherein said method further comprises provisioning said one or more system service parameters; and monitoring said one or more system performance parameters related to information management in real time or on a historical basis.

28. The method of claim 27, further comprising reporting information related to said monitored system performance parameters.

29. The method of claim 26, wherein said one or more class identification parameters comprise at least one of identity or class of user or request, type of request, resource requirement associated with fulfillment of a particular request, or a combination thereof; wherein said system service parameters comprise at least one of aggregate bandwidth ceiling, service level agreement policy, admission control policy, information metering policy, processing resource allocation policy, storage resource allocation policy, or a combination thereof; and wherein said one or more system performance parameters comprise at least one of resource availability, resource usage, adherence to provisioned system service parameters, content usage patterns, time of day access patterns, or a combination thereof.

30. The method of claim 28, wherein said reported information comprises at least one of information related to operating or usage characteristics of an information management system, subsystems or resources; information related to processing of individual information management requests or classes of information management requests; or a combination thereof; wherein said one or more class identification parameters comprise at least one of identity or class of user or request, type of request, resource requirement associated with fulfillment of a particular request, or a combination thereof; wherein said system service parameters comprise at least one of aggregate bandwidth ceiling, service level agreement policy, admission control policy, information metering policy, processing resource allocation policy, storage resource allocation policy, or a combination thereof; and wherein said one or more system performance parameters comprise at least one of resource availability, resource usage, adherence to provisioned system service parameters, content usage patterns, time of day access patterns, or a combination thereof.

31. The method of claim 30, wherein said reported information comprises at least one of system resource utilization metrics, application performance data, SLA performance data, or a combination thereof.

32. The method of claim 31, further comprising providing said reported information to one or more physically remote located systems or external entities for generation of billing data based thereon.

33. The method of claim 30, wherein said reported information comprises billing information.

34. The method of claim 24, further comprising adjusting information management processing behavior based on said one or more monitored system performance parameters.

35. The method of claim 34, wherein said adjusting said information management processing behavior comprises adjusting said information management processing behavior to bring system performance into adherence with said one or more of said system service parameters.

36. The method of claim 25, wherein said information management system comprises a plurality of processing engines that are distributively interconnected.

37. The method of claim 36, wherein said method comprises prioritizing performance of said at least one information manipulation task by deterministically assigning said at least one information manipulation task to one or more of said processing engines in order to prioritize performance of said information manipulation task relative to at least one other information manipulation task, wherein said assignment of said at least one information manipulation task to one or more processing engines is based on one or more class identification parameters associated with said information manipulation task, based on one or more system service parameters associated with said system, based on one or more system performance parameters associated with said system, or a combination thereof.

38. The method of claim 25, wherein said method comprises prioritizing performance of said at least one information manipulation task by dynamically allocating or re-allocating at least one shared resource of said information management system in order to prioritize performance of said information manipulation task relative to at least one other information manipulation task, wherein said dynamic allocation or re-allocation is based on one or more class identification parameters associated with said information manipulation task, based on one or more system service parameters associated with said system, based on one or more system performance parameters associated with said system, or a combination thereof.

39. The method of claim 36, wherein said method further comprises managing performance of one or more information manipulation tasks related to said information management by two or more of said plurality of processing engines concurrently based at least in part on based on said one or more class identification parameters associated with said information manipulation task, based on said one or more system service parameters associated with said system, based on said one or more system performance parameters associated with said system, or a combination thereof.

40. The method of claim 25, wherein said information management system is coupled to a network at a point outside a core of said network.

41. The method of claim 25, wherein said information management system comprises a network endpoint information management system.

42. The method of claim 25, wherein said information management system comprises a network endpoint content delivery system.

43. The method of claim 25, wherein said differentiated service comprises differentiated business service.

44. The method of claim 25, wherein said differentiated service comprises differentiated information service.

45. A method of providing differentiated service, comprising prioritizing performance of at least one information manipulation task based at least in part on one or more priority-indicative parameters associated with said information manipulation task, one or more priority-indicative parameters associated with a request for said information manipulation task, one or more priority-indicative parameters associated with a user requesting said information manipulation task, or a combination thereof.

46. The method of claim 45, wherein said method further comprises providing said differentiated service in an information management system having a plurality of processing engines that are distributively interconnected.

47. The method of claim 46, wherein said information management system comprises a content delivery system, and wherein said plurality of processing engines comprise a system management processing engine, a storage management processing engine, and an application processing engine.

48. The method of claim 46, wherein said method comprises prioritizing performance of said at least one information manipulation task by deterministically assigning said at least one information manipulation task to one or more of said processing engines in order to prioritize performance of said information manipulation task relative to at least one other information manipulation task, wherein said assignment of said at least one information manipulation task to one or more processing engines is based on one or more priority-indicative parameters associated with said information manipulation task, one or more priority-indicative parameters associated with a request for said information manipulation task, one or more priority-indicative parameters associated with a user requesting said information manipulation task, or a combination thereof.

49. The method of claim 45, wherein said method comprises prioritizing performance of said at least one information manipulation task by dynamically allocating or re-allocating at least one shared resource of said information management system in order to prioritize performance of said information manipulation task relative to at least one other information manipulation task, wherein said dynamic allocation or re-allocation is based on one or more priority-indicative parameters associated with said information manipulation task, one or more priority-indicative parameters associated with a request for said information manipulation task, one or more priority-indicative parameters associated with a user requesting said information manipulation task, or a combination thereof.

50. The method of claim 46, wherein said method further comprises managing performance of one or more information manipulation tasks related to said information management by two or more of said plurality of processing engines concurrently based at least in part on based on said one or more priority-indicative parameters associated with said information manipulation tasks, one or more priority-indicative parameters associated with a request for said information manipulation tasks, one or more priority-indicative parameters associated with a user requesting said information manipulation tasks, or a combination thereof.

51. The method of claim 46, wherein at least one of said plurality of processing engines is located physically remote from at least one other of said plurality of processing engines.

52. The method of claim 51, wherein two or more of said plurality of processing engines comprise at least one of separate components of a data center, separate components of a cluster of information management systems, separate processing engines that are distributively interconnected across a network, or a combination thereof.

53. The method of claim 46, wherein said information management system is coupled to a network at a point outside a core of said network.

54. The method of claim 46, wherein said information management system comprises a deterministic system architecture.

55. The method of claim 46, wherein said information management system comprises a network endpoint information management system.

56. The method of claim 46, wherein said information management system comprises a network endpoint content delivery system.

57. The method of claim 46, wherein said information management system comprises:
a deterministic system architecture;

an operating system in communication with said deterministic system architecture;

at least one application in communication with said operating system; and

a differentiated service infrastructure in communication with said operating system.

58. The method of claim 57, wherein said deterministic system architecture comprises a plurality of processing engines that are distributively interconnected.

59. The method of claim 58, wherein said system architecture supports system calls to OS-extensions to determine characteristics of one or more resource utilization parameters associated with one or more of said processing engines; and wherein said method further comprises determining characteristics of said one or more resource utilization parameters by making system calls to OS-extensions, and prioritizing performance of at least one information manipulation task related to said information management based at least in part on said determined characteristics of said one or more resource utilization parameters.

60. The method of claim 57, wherein said system architecture supports system calls to OS-extensions to determine characteristics of user priority information associated with information managed by said information management system; and wherein said method further comprises determining characteristics of said user priority information by making system calls to OS-extensions, and prioritizing performance of at least one information manipulation task related to said information management based at least in part on said determined characteristics of said user priority information.

61. The method of claim 59, wherein said system architecture supports system calls to OS-extensions to determine characteristics of user priority information associated with information managed by said information management system; and wherein said method further comprises determining characteristics of said user priority information by making system calls to OS-extensions, and prioritizing performance of at least one information manipulation task related to said information management based at least in part on said determined characteristics of said user priority information.

62. The method of claim 59, wherein said method further comprises handling system congestion and prioritizing performance of said at least one information management task by using said application to make calls into said operating system indicative of the relative priority of each connection or request, and to make calls indicative of the availability of necessary resources in said system architecture to support said information management.

63. The method of claim 59, wherein said operating system is capable of direct deterministic communication with said deterministic system architecture, and wherein said method further comprises using said operating system to implement and manage system calls indicative of the relative priority of each connection or request, and to make calls indicative

of the availability of necessary resources in said system architecture to support said information management.

64. The method of claim 59, wherein said system further comprises a deterministic system BIOS that provides a communication interface between said system architecture and said operating system, and wherein said method further comprises using said deterministic system BIOS to manage system calls made to processing engines of said system architecture from said at least one application.

65. The method of claim 64, wherein said deterministic system BIOS is capable of responding to application requests for resources with availability information, rerouting information, or SLA choice information.

66. The method of claim 46, wherein said information management system is coupled to a network; and wherein said method further comprises prioritizing performance of said at least one information manipulation task by manipulating information in a differentiated manner based at least in part on a status of at least one priority-indicative parameter associated with a request received from a network for said information manipulation task.

67. The method of claim 46, wherein said method further comprises managing performance of at least one information manipulation task related to said information management based on one or more class identification parameters associated with said information manipulation task, based on one or more system service parameters associated with said system, based on one or more system performance parameters associated with said system, or a combination thereof.

68. The method of claim 45, wherein said differentiated service comprises differentiated business service.

69. The method of claim 45, wherein said differentiated service comprises differentiated information service.

70. A method of managing information in a network connectable information management system, comprising prioritizing information manipulation in a session-aware

differentiated manner based at least in part on a status of at least one policy-indicative parameter associated with information management policy.

71. The method of claim 70, wherein said method comprises prioritizing performance of said information manipulation based on one or more priority-indicative parameters associated with said information manipulation, one or more priority-indicative parameters associated with a request for said information manipulation, one or more priority-indicative parameters associated with a user requesting said information manipulation, or a combination thereof.

72. The method of claim 70, wherein said method comprises prioritizing performance of said information manipulation based on one or more class identification parameters associated with said information manipulation, based on one or more system service parameters associated with said information management system, based on one or more system performance parameters associated with said information management system, or a combination thereof.

73. The method of claim 70, wherein said network connectable information management system comprises a content delivery system.

74. The method of claim 73, wherein said content delivery system comprises a network endpoint content delivery system.

75. The method of claim 73, wherein said content delivery system is configured to use shared resources to deliver content to a plurality of users in response to requests for said content from said plurality of users, and wherein said method further comprises prioritizing delivery of content to at least one first user of said plurality of users relative to at least one second user of said plurality of users by dynamically allocating or re-allocating said shared resources to said individual first and second users based on policy-indicative information associated with individual requests submitted by said first and second users in order to prioritize delivery of content to said first user relative to said second user.

76. The method of claim 75, wherein said content delivery system comprises a network endpoint content delivery system.

77. The method of claim 75, wherein said allocating comprises allocating said shared resources using admission control policy, information metering policy, QoS policy, queue prioritization, request transfer, or a combination thereof.

78. The method of claim 77, wherein said policy-indicative information comprises at least one of content-based class, user-based class, or a combination thereof.

79. The method of claim 73, wherein said content delivery system comprises a plurality of processing engines that are distributively interconnected.

80. The method of claim 79, wherein said content delivery system is configured to deliver content to a plurality of users in response to requests for said content from said users, and wherein said method further comprises prioritizing delivery of content to at least a first user of said plurality of users relative to at least a second user of said plurality of users by deterministically assigning at least one content delivery information manipulation task to one or more of said processing engines in order to prioritize delivery of content to said first user relative to said second user.

81. The method of claim 80, wherein said content delivery system comprises a network endpoint content delivery system.

82. The method of claim 80, wherein said plurality of processing engines comprise a system management processing engine, a storage management processing engine, and an application processing engine.

83. The method of claim 80, wherein said content delivery system is configured to use shared resources to deliver content to a plurality of users in response to requests for said content from said plurality of users, and wherein said method further comprises prioritizing delivery of content to at least one first user of said plurality of users relative to at least one second user of said plurality of users by dynamically allocating or re-allocating said shared resources to said individual first and second users based on policy-indicative information associated with individual requests submitted by said first and second users in order to prioritize delivery of content to said first user relative to said second user.

84. The method of claim 83, wherein said content delivery system comprises a network endpoint content delivery system.

85. The method of claim 70, wherein said differentiated service comprises differentiated business service.

86. The method of claim 70, wherein said differentiated service comprises differentiated information service.

87. A system comprising an information management system capable of prioritizing performance of at least one information manipulation task in a session-aware manner.

88. The system of claim 87, wherein said system is capable of prioritizing performance of at least one information manipulation task based at least in part on a status of at least one policy-indicative parameter associated with information management policy.

89. The system of claim 88, wherein said system comprises a plurality of processing engines that are distributively interconnected.

90. The system of claim 89, wherein said system comprises a content delivery system, and wherein said plurality of processing engines comprise a system management processing engine, a storage management processing engine, and an application processing engine.

91. The system of claim 90, wherein said content delivery system comprises a network endpoint content delivery system.